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10/553,190

10/13/2005

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EXAMINER

BAND, MICHAEL A

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

04/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/553,190 | Applicant(s) IWABUCHI ET AL. | |
| | Examiner MICHAEL BAND | Art Unit 1795 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/13/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 10/13/2005 cites an "International Search Report " as non-patent literature. Said citation has been lined-through because it is not a published document available to the public. However, the Examiner has considered the search report.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 3-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Asaumi (JP No. 60059063).

With respect to claim 1, Asaumi discloses a porous thin film of a desired material (i.e. a first metal component) [7] and a metallic material (i.e. a second metal component) [8] by simultaneously, and therefore randomly, sputtered onto a substrate [5] to form a mixed thin film [9], with said metallic material [8] removed via plasma etching (abstract). Additionally Asaumi discusses how the metallic material [8] is "another metal" when deposited with the desired material [7] (p. 367, 2nd col., para 3), thus it is inherent that said desired material [7] is also a metal.

With respect to claim 3, Asaumi further discloses in the Prior Art section that alumina (i.e. Al_2O_3) is used as cathode (i.e. target) material (p. 367, 1st col., para 6).

With respect to claim 4, Asaumi further discloses in the Prior Art section that alumina (i.e. Al_2O_3) (i.e. first metal) is used as cathode (i.e. target) material (p. 367, 1st col., para 6), with platinum (Pt) (i.e. second metal) also used (p. 368, 2nd col., para 4).

4. Claim 2 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Asaumi (JP No. 60059063).

With respect to claim 2, Asaumi further discloses forming a target between the desired material [7] and metallic material [8] (abstract) to form a mixed (i.e. composite film). It is either inherent or obvious that since the target is formed of two distinct components, the targets can be split into two distinct targets.

5. Claims 10 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto (JP No. 1123067).

With respect to claims 10 and 12-14, Yamamoto discloses forming a thin film by mixing an auxiliary material (i.e. second metal) of aluminum (Al) with a film material (i.e. first metal) of platinum (Pt), where the mixed film is deposited onto a substrate via sputtering (abstract). Yamamoto also discusses immersing the mixed film in an alkali or acid liquor (i.e. aqueous solution) to remove the Al auxiliary material (i.e. second metal portions) (abstract), with it being inherent that some part of the Pt film material (i.e. first metal portions) is also removed during this immersion.

6. Claim 11 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamamoto (JP No. 1123067).

With respect to claim 1, Yamamoto further discloses forming a target of Al grains and Pt grains to form a mixed target, which is then sputtered onto the substrate to form a mixed (i.e. composite film) (abstract). It is either inherent or obvious that since the target is formed of two distinct components, the targets can be split into two distinct targets.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5-6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asami (JP No. 60059063) as applied to claim 1 above, and further in view of Tomita (US Patent No. 5,256,443).

With respect to claims 5-6 and 9, the reference is cited as discussed for claim 1. However Asami is limited in that it is not suggested to have the second metal comprised of titanium.

Tomita teaches a method of producing thin film sensors via sputtering (abstract; col. 1, lines 31-48), where fig. 1 depicts mixing materials to form a composite film and said film is then baked. Tomita further teaches having a multi-component noble metal on a substrate where metals such as Al (aluminum) or Ti (titanium) are used (col. 1, lines 58-63), platinum used as the noble metal on the substrate (col. 3, lines 45-47).

Tomita cites the advantage of using these components as producing multi-component porous thin film where the crystalline and amorphous structure or the compactness of said porous thin film is easily controlled (col. 5, lines 58-68; col. 6, lines 1-6).

It would have been obvious to one of ordinary skill in the art to use titanium as a metal material taught in Tomita as a component in the mixed film of Asaumi to gain the advantages of easier control of crystalline and amorphous structure and compactness.

9. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asaumi (JP No. 60059063) as applied to claim 1 above, and further in view of Yamamoto (JP No. 1123067).

With respect to claims 7-8, the references are cited as discussed for claim 1. However Asaumi is limited in that while a plasma-etch is used to remove the metallic material [8] (i.e. metal portions) (abstract), it is not suggested to remove the metal portions via aqueous solution.

Yamamoto teaches forming a thin porous film where said film comprises an auxiliary material (i.e. metal portions) with a film material from a sputter target, where the auxiliary material is aluminum (Al) and the film material is platinum (Pt) (abstract). Yamamoto further teaches immersing in an alkali or acidic liquor (i.e. aqueous solution) to remove the Al (abstract).

Since both Asaumi and Yamamoto both teach sputtering materials to create a porous thin film and then removing one component of the sputtered material, it would have been obvious to one of ordinary skill in the art to substitute the plasma-etch for acidic or alkali liquor to achieve the predictable result of the removal of specific material.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Band whose telephone number is (571) 272-9815. The examiner can normally be reached on Mon-Fri, 8am-4pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. B./

Examiner, Art Unit 1795

/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1795